

# Design and Testing of an Education Model Based on a Blended Approach for Nursing Students at Lorestan University of Medical Sciences Using Thematic Analysis Approach

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### ABSTRACT

**Objective:** The present study aimed to design and test an education model based on a blended approach among nurses at medical universities.

**Methods and Materials:** In this qualitative study, the participants included experts and specialists in the field of medical education, nursing department managers, and nursing faculty members (academic staff) with specific years of experience in medical education at Lorestan University of Medical Sciences, totaling 15 individuals. The study was fundamental in nature. The research tools included semi-structured interviews and a review of the literature and previous research. The findings were analyzed using document analysis, library studies, thematic analysis, and the Delphi method.

**Findings:** The results indicated that the education model based on the blended approach emerged in the form of five components: pedagogy of education, educational objectives, educational content, teaching methods, and educational evaluation. The quantitative data analysis results showed that the blended approach education for students included 41 indicators within five main components (pedagogy of education, educational objectives, educational content, teaching methods, educational evaluation), of which three components (pedagogy of education, educational objectives, teaching methods) were derived from literature review, and two components (educational content, educational evaluation) were derived from data analysis of interviews.

**Conclusion:** The results suggest that the blended approach in education, encompassing pedagogy, educational objectives, content, methods, and evaluation, effectively addresses the diverse needs of nursing students. By integrating traditional and virtual methods, this model enhances flexibility, engagement, and the overall quality of education, supporting better academic performance and satisfaction among nursing students at Lorestan University of Medical Sciences.

**Keywords:** blended approach education, pedagogy of education, educational objectives, educational content, teaching methods, educational evaluation.

## 1. Introduction

Nearly two decades have passed since the advent of e-learning globally, particularly in universities. This method began with the empowerment of computer tools and subsequently expanded with the global internet network, enabling the transmission of all types of information via the internet. Following this advancement, virtual e-learning classes were created to simulate and fully implement the educational process virtually, and the first virtual universities were established with the aim of providing online and distance education services. In the last decade, the topic of replacing virtual education with traditional face-to-face methods was introduced, and initial experiments in this area began. However, the results of these experiments were not very satisfactory (Abdelfattah et al., 2024; Anthony et al., 2019; Gashi et al., 2024; Ghalavand, 2024).

Of course, e-learning has met some desirable goals and demands, such as repeatability of lessons, low cost of education, and accessibility from anywhere at any time. However, it has not been very successful in improving the quality of education. Observing the failures of the first e-learning experiences and understanding its prominent features, universities adopted a blended approach to education that combines e-learning and face-to-face methods. This approach aims to utilize the irreplaceable advantages of each method to design a higher-quality learning model. Today, this educational system is commonly proposed instead of purely electronic or purely face-to-face education and has met with considerable success and acceptance in its recent experiences. Currently, many university virtual education systems have adopted this approach as well (Hakimi et al., 2024; Haseli Songhori & Salami, 2024; Poon et al., 2024; Tong & Wei, 2020).

The blended education method has also found a special place in better learning of medical sciences, especially nursing (Boelens et al., 2018). The volume of information in the field of nursing is increasing at such a pace that it has created numerous challenges for health professionals. Blended education provides notable benefits for the continuity of medical education, in addition to educational and research issues, and patient treatment issues can also be facilitated with the help of blended educational methods (Wilkes et al., 2020). Therefore, the necessity of using modern methods by educational systems has been felt, and the application of these methods in various fields, including nursing, has become common. Blended educational methods lead to increased student satisfaction, acceleration and

continuity of learning, and the development of problem-solving and critical thinking skills in nursing students (Wichadee, 2017).

Many studies have been conducted on the effectiveness of blended education methods. These studies have introduced blended education as the best and most complete method of teaching and learning, considering it a comprehensive and fundamental method for continuous and spontaneous education that emphasizes learners' interests and individual characteristics, considering students' motivation and experience, activating them, and fostering a sense of responsibility, independence, self-confidence, and creativity in clinical practice (Bhardwaj et al., 2015). Most of these studies show the positive impact of this educational approach on variables such as learners' academic achievement, academic motivation, attitudes, retention rates, and satisfaction among nursing students (Elisabeth et al., 2009; Haseli Songhori & Salami, 2024; Jowsey et al., 2020; Kabirian, 2024; Karimi et al., 2021; Karimi Moonaghi & mohsenizadeh, 2019; Neu et al., 2024; Nowroozi et al., 2011; Pourghane et al., 2018). Blended education increases student motivation and satisfaction, improves student-teacher interaction, enhances interest in the subject, better retention of knowledge, better understanding of concepts, and creates a friendlier classroom environment (B. Liu, 2024; Y. Liu, 2024). However, some have considered blended learning an inappropriate idea, arguing that this approach challenges traditional education and encourages the implementation of online and mobile learning platforms. Moskal et al. (2016) stated that with proper planning and support, the implementation of blended education can lead to profound and positive changes in education and learning in higher education institutions.

Therefore, given the increasing advancement of science in the field of nursing, and considering that nursing is a combination of theoretical and clinical sciences, the need to use modern educational approaches in this field is felt. Considering the importance of the subject and the significant role of using blended education in teaching and learning nursing students at Lorestan University of Medical Sciences, and reviewing related studies and the researcher's experiences, and observing various deficiencies and challenges in blended education for nursing students at Lorestan University of Medical Sciences, such as the absence of a comprehensive model for blended education and the lack of studies to examine blended education for nursing students at Lorestan University of Medical Sciences and develop a comprehensive model that can be tested, the

researcher in this study aims to design and test a conceptual model for blended education among nursing students at Lorestan University of Medical Sciences. Based on this, the researcher seeks to answer the question: What is the blended education model for nursing students at medical universities?

## 2. Methods and Materials

### 2.1. Study Design and Participants

This study is fundamental in terms of its aim and descriptive in terms of the method of information gathering. The statistical participants included 15 experts and specialists in the field of medical education, nursing department managers, and nursing faculty members (academic staff) with specific years of experience in medical education at Lorestan University of Medical Sciences, selected purposefully. To determine the number of participants in the qualitative phase, the criterion of theoretical saturation was used. In individual interviews with participants, after conducting 15 interviews, the main and secondary factors identified in previous interviews were repeated, indicating saturation, meaning no new data were obtained, and saturation was achieved, so the interviews were stopped. In the library method, literature and subject background were used by note-taking from existing documents and records, and in the field method, the desired data were collected through semi-structured interviews and researcher-made questionnaires.

### 2.2. Data Collection

The research tools included semi-structured interviews and a review of literature and previous research. To conduct interviews with experts using the semi-structured interview method, Cohen and Martin's (1986) model was used in six steps. By studying the research literature, the components of blended education were extracted, and the main goal of the research was determined, then the main goal was converted into sub-goals. The interview structure and guide were prepared. Since the researcher intended to delve deeply into the experts' views, open-ended questions were identified. At the beginning of each interview, the researcher introduced himself and tried to create a friendly environment and refrained from inserting his judgments, opinions, and previous knowledge into the interview process. The interviews were conducted face-to-face, semi-structured, with open-ended questions, lasting 30-45 minutes each.

Questions were designed using a review of the research literature and existing studies. During the interviews, answers to one question could lead to another question, but to ensure the interview remained controlled, key questions formed the main structure of each interview. Experts' answers were recorded during the interviews and then transcribed into written text.

### 2.3. Data analysis

In this research, to strengthen the internal validity of the study, methods such as pluralism, member checking, prolonged engagement at the research site or repetitive observation of similar phenomena, peer debriefing, and bracketing were used. To calculate the reliability of the interviews using the intra-subject agreement method of two coders, one of the educational management professors familiar with coding was asked to participate in the study as a secondary coder. The researcher, along with this research colleague, coded three interviews and calculated the intra-subject agreement percentage, which is used as a reliability index for the analysis. The reliability achieved by the two coders was 83.56%. It is worth noting that data analysis was conducted using MaxQDA software.

After preparing the written text of the experts' responses, the process of analyzing the explicit and implicit content of the collected information from the statements and writings began. For interview text analysis, Braun and Clarke's (2006) thematic analysis method was used. After analyzing the interview data, the results were presented in a report.

## 3. Findings and Results

Participants responded to questions related to each dimension of the model, explaining the design and testing of the educational model based on a hybrid approach for nursing students at Lorestan University of Medical Sciences.

Open coding is part of the analysis process, involving a detailed examination of the data, naming, and classifying the data. After extracting the components and indicators related to the hybrid approach education from the literature, the researcher used open-ended questions in semi-structured interviews with experts. Data from each interview were analyzed immediately after the interview and compared with the data obtained from the literature, with repetitive items removed. Text analysis of the interviews was conducted using thematic analysis, which involved repeated study and review of the data. Before coding began, all data were read at least once. Ideas about coding and patterns were formed

during this stage. Following this, the coding process was initiated by the researcher. The next step began when all the data had been initially coded and collected, identifying a long list of diverse codes across the data. In this step, different codes were categorized under sub-themes, identifying and collecting all coded data related to each sub-theme. Generally, in this stage, codes were analyzed, and the integration of various codes to form basic themes (sub-themes) was carried out. Shapes, tables, or writing the name of each code with a brief interpretation and placing it in the relevant sub-theme column were used to categorize different codes. In sub-theme coding, concepts that were common or

synonymous were placed together. Initial codes and categories formed during open coding were compared and, additionally, merged codes with similar meanings and groups with common concepts were grouped. In the final stage of coding, main themes were identified, and the researcher created a broader classification (main theme) from the categorized data in sub-themes, identifying common aspects of the sub-themes. In the next stage, primary open codes were converted into secondary codes, with several codes becoming one conceptual code. [Table 1](#) presents the results of open coding based on secondary and conceptual codes.

**Table 1**

*Secondary Coding*

Secondary Codes	Frequency	Secondary Codes	Frequency
Learner	6	Teacher	6
Increasing learning motivation through interactions	7	Learning	4
Institutional and organizational factors	4	Interactions	7
Computer skills	5	Technology	6
Teacher competencies	6	Skill acquisition	8
Academic performance	11	Providing quick feedback	5
Learning effectiveness	6	Technical aspects	6
Attention to individual differences of learners	5	Providing opportunities for students to present lessons	5
Content	7	Based on interests and needs	5
Educational factors	5	Learner abilities	5
Attention to cognitive aspects	5	Developing creative and critical thinking	5
Attention to attitudinal aspects	6	Satisfaction with teaching quality	8
Improving teaching efficiency	1	Future orientation	3
Related to learners' previous experiences	5	Providing opportunities for active learning	5
Providing opportunities to interact with various learning resources and experiences	9	Conducting evaluations to provide feedback and improve learning and teaching	5
Information processing by learners	5	Supporting necessary technologies	5
Environmental factors	5	Enhancing learning environments	9
Performing and presenting assignments for learners	5	Easy access to educational materials	6
Combining and coordinating traditional and virtual methods in the learning environment	5	Easy access to educational resources	2
Management	5	Flexibility	5
Support and backup	6	Providing necessary technical facilities	5
Competency needs	1	Rules and regulations	5
Utilizing both traditional and virtual education	5	Freedom of action	4
Academic enthusiasm	4	Monitoring the quality of evaluation methods	5
Compatibility of education with students' abilities	5		

After determining and ensuring the accuracy of the extracted components from the theoretical literature and interviews, the researcher integrated the components. Through appropriate classification, all obtained and closely related components (in terms of content) were placed in a

separate category. After this stage, using mental ability and brainstorming, the researcher determined the dimensions for each category. It was then identified which components each dimension included. [Table 2](#) presents the mentioned items.

**Table 2**

*Components of Blended Approach Education for Nursing Students at Lorestan University of Medical Sciences*

Main Component	Sub-component	Interviewee Codes	
Pedagogy of Education	Utilizing both traditional and virtual education	M6, M8, M9, M13, M15	
	Combining and coordinating traditional and virtual methods in the learning environment	M6, M8, M9, M13, M15	
	Management	M6, M8, M12, M13, M15	
	Support and backup	M5, M6, M10, M11, M13, M15	
	Rules and regulations	M6, M8, M11, M13, M14	
	Attention to individual differences of learners	M1, M2, M4, M8, M9	
	Learner characteristics	M1, M4, M7, M9, M10, M11	
	Teacher characteristics	M1, M2, M3, M5, M8, M11	
	Educational Objectives	Attention to cognitive aspects	M2, M8, M10, M13, M14
		Attention to computer skills	M1, M2, M3, M4, M8
		Attention to technical aspects	M1, M3, M8, M9, M13, M14
		Skill acquisition	M1, M2, M3, M4, M5, M8, M12, M14
		Attention to attitudinal aspects	M2, M3, M4, M5, M7, M8
		Developing creative and critical thinking	M2, M3, M6, M10, M14
Based on interests and needs		M1, M2, M7, M10, M14	
Flexibility		M6, M8, M10, M11, M13	
Attention to learner abilities		M2, M10, M11, M12, M15	
Educational Content		Providing opportunities to interact with various learning resources and experiences	M3, M5, M6, M7, M10, M11, M12, M13, M15
	Content flexibility	M1, M3, M4, M5, M7, M11, M13	
	Related to learners' previous experiences	M2, M4, M6, M11, M13	
	Providing opportunities for students to present lessons	M1, M3, M9, M12, M15	
	Increasing learning motivation through interactions	M1, M2, M4, M8, M11, M13, M15	
	Information processing by learners	M3, M7, M9, M13, M15	
	Performing and presenting assignments for learners	M4, M6, M9, M12, M13	
Teaching Methods	Enhancing learning environments	M4, M9, M7, M10, M11, M12, M13, M14, M15	
	Educational factors	M2, M6, M10, M13, M15	
	Environmental factors	M4, M7, M9, M11, M14	
	Providing necessary technical facilities	M5, M10, M11, M12, M14	
	Providing opportunities for active learning	M2, M4, M9, M12, M14	
	Using technological tools	M1, M2, M4, M5, M8, M14	
	Easy access to educational materials	M4, M5, M7, M11, M14, M15	
	Supporting necessary technologies	M3, M4, M7, M8, M12	
	Educational Evaluation	Conducting evaluations to provide feedback and improve learning and teaching	M3, M4, M5, M6, M7
		Providing quick feedback	M1, M5, M10, M11, M15
Monitoring the quality of evaluation methods		M9, M5, M10, M12, M13	
Satisfaction with teaching quality		M2, M6, M7, M8, M10, M11, M13, M15	
Engaging students by teachers		M1, M3, M4, M7, M9, M12, M15	
Compatibility of education with students' abilities		M7, M10, M11, M13, M15	
Teacher competencies		M1, M3, M4, M5, M6, M7	
Improving academic performance		M2, M3, M4, M6, M7, M9, M10, M11, M12, M13	
Determining learning effectiveness		M1, M3, M6, M7, M8, M11	

From the analysis of 15 interviews, a total of 263 initial codes were extracted. After analyzing the text of the interviews, 41 indicators were obtained in the form of 5 main components (pedagogy of education, educational objectives, educational content, teaching methods, educational evaluation). Three of these components overlapped with the

literature review (pedagogy of education, educational objectives, teaching methods), and two components (educational content, educational evaluation) were innovations derived from the data analysis of the interviews in this study.



#### 4. Discussion and Conclusion

The thematic analysis method was used to present the design and testing of a blended approach-based educational model (case study: nursing students at Lorestan University of Medical Sciences). In this study, interviews were conducted with 15 experts. The interviews were semi-structured, asking questions about local indicators. All interviews were recorded, and data analysis was carried out after each interview to form the model. The qualitative data analysis stages were coded. In this study, first, the content of all interviews was transcribed and then open-coded using the key point coding method. This involved writing the collected data from the interviews on paper and creating open codes through line-by-line analysis of the existing writings. The open coding of the interviews after editing is presented; these codes are derived from the writings and, in some cases, the exact words themselves. From the analysis of 15 interviews, a total of 263 initial codes were extracted. After analyzing the text of the interviews, 41 indicators were obtained in the form of 5 main components (pedagogy of education, educational objectives, educational content, teaching methods, educational evaluation).

Pedagogy of education based on a blended approach in the context of educating nursing students at Lorestan University of Medical Sciences includes various elements and aspects that utilize the combination and coordination of traditional and virtual methods in the learning environment. Virtual education allows students to access educational resources at any time they wish. This time flexibility allows students to choose the best time for their learning and improve time management by arranging time and tasks. The combination of traditional and virtual education provides more diversity in teaching methods. Using virtual technologies such as videos, diagrams, simulations, and educational games increases the attractiveness and enjoyment of learning. Additionally, the diversity in teaching methods and content presentation helps students engage with the material in various ways, preventing fatigue and boredom. Virtual education can also encourage collaboration and interaction among students. Creating online educational groups and group activities using virtual technologies encourages students to share experiences and participate in the learning process. Using virtual tools and technologies for direct communication with the instructor and classmates enhances the possibility of asking questions and discussion. Virtual education can help develop students' metacognitive skills, including abilities such as critical

thinking, problem-solving, creativity, transitional thinking, and independent learning. In traditional education, costs related to in-person attendance, class rental, transportation, and other class-related expenses are required. By using virtual education, these costs can be reduced, and financial resources can be allocated to other educational matters. Management in pedagogy must appropriately plan the educational process, including setting educational goals, developing curricula and syllabi, allocating resources and time, and determining educational methods and strategies. Accurate and comprehensive planning helps managers and instructors execute the educational process with high quality and efficiency. Management in pedagogy must organize the educational process so that activities and stages of education, including lesson and session division, assigning roles and responsibilities to instructors and educational staff, preparing necessary resources and equipment, and logically and cohesively organizing educational spaces, are carried out. Such support gives students confidence and motivation, enabling them to engage in the learning process more confidently. Additionally, social support can create an environment where students share experiences, opinions, and ideas and benefit from interaction and collaboration with each other. Instructors and educational managers must provide opportunities and environments where students can actively participate in their learning process, critically view questions and issues, and deepen their understanding through collaboration and interaction with others. An instructor must be able to apply various methods and strategies in teaching and respond to different learners' needs. Diversity in teaching methods, educational materials, and activities can enhance learners' motivation and focus, making the educational environment attractive and dynamic. The results obtained in this aspect align with the results from previous studies (Boelens et al., 2018; Jowsey et al., 2020; Karimi et al., 2021; Karimi Moonaghi & mohsenizadeh, 2019; Nowroozi et al., 2011; Rieger et al., 2009).

The educational objectives based on a blended approach in the context of educating nursing students at Lorestan University of Medical Sciences include various elements and aspects that utilize attention to cognitive aspects, computer skills, technical aspects, skill acquisition, attitudinal aspects, fostering creative and critical thinking, interests and needs, and learner abilities. Attention to cognitive aspects plays a significant role in educational objectives. Cognitive aspects refer to mental activities and processes that play a role in learning and understanding information. Attention to cognitive aspects in designing

educational objectives can help better learn and understand concepts and topics. Studies have shown that learners with improved focus and attention perform better in the learning process. Therefore, educational objectives can aim to improve learners' focus and attention to enhance understanding and learning of concepts. Educational objectives can aim to develop learners' cognitive skills, including memory maneuvering, focus, critical thinking, problem-solving, planning, recognizing and solving problems, and using effective learning strategies. Designing educational objectives that help develop these skills can facilitate improved cognitive functioning and thinking in learners. Attention to cognitive aspects in educational objectives can enhance learners' focus and attention. Given that focus and attention to information and lesson topics are essential for learning, designing educational objectives can aim to improve learners' focus and attention. Computer skills can help develop learners' critical thinking and problem-solving skills. Using computer technologies, learners can analyze data, evaluate information, choose optimal solutions, and develop logical reasoning. These skills are very useful for solving complex problems and evaluating educational resources. Attention to technical aspects in education can support innovation and creativity in learners. Technical skills provide learners with tools and methods that enable them to creatively solve complex problems and present new innovations. These capabilities are widely used in work and business environments. Fostering creative thinking in education can enhance learners' creativity, allowing them to express new ideas, think comprehensively and innovatively, and experience extraordinary solutions. Critical thinking helps learners develop independent evaluation abilities. The results obtained in this aspect align with the results from the prior studies (Boelens et al., 2018; Jowsey et al., 2020; Karimi et al., 2021; Karimi Moonaghi & mohsenizadeh, 2019; Nowroozi et al., 2011; Rieger et al., 2009; Sharifi et al., 2019).

The educational content based on a blended approach in the context of educating nursing students at Lorestan University of Medical Sciences includes various elements and aspects that utilize providing opportunities to interact with various learning resources and experiences, relating to learners' previous experiences, providing opportunities for students to present lessons, increasing learning motivation through interactions, information processing by learners, and performing and presenting assignments for learners. Providing opportunities to interact with various learning resources and experiences in educational content can inspire

learners. By encountering diverse resources such as books, articles, videos, samples, and others' experiences, they gain new ideas, perspectives, and approaches to educational topics.

## 5. Limitations & Suggestions

One limitation of this study is the small sample size, consisting of only 15 participants, which may not be representative of the broader population of nursing students and educators. Additionally, the study's focus on Lorestan University of Medical Sciences may limit the generalizability of the findings to other institutions with different educational contexts and resources. The reliance on self-reported data from interviews could also introduce bias, as participants may provide socially desirable responses. Finally, the qualitative nature of the study, while providing in-depth insights, may not capture the full complexity and variability of the educational experiences across different settings.

Future research should consider expanding the sample size to include a more diverse group of participants from various universities to enhance the generalizability of the findings. Longitudinal studies that track the implementation and outcomes of the blended educational model over time would provide a more comprehensive understanding of its long-term effects on student learning and performance. Additionally, quantitative methods could be employed to complement the qualitative findings and provide statistical validation of the identified themes and components. Investigating the impact of blended education on specific aspects such as critical thinking, problem-solving skills, and student engagement in different fields of study beyond nursing would also be beneficial.

The findings of this study suggest that educational institutions should consider adopting a blended approach to enhance the quality and accessibility of nursing education. Institutions should invest in the necessary technological infrastructure and provide training for both faculty and students to effectively utilize virtual and traditional learning methods. Policymakers should develop guidelines and frameworks that support the integration of blended education models, ensuring that they are adaptable to the diverse needs of learners. Additionally, continuous assessment and feedback mechanisms should be established to monitor the effectiveness of blended education and make necessary adjustments to improve learning outcomes.

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## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

## Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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## Authors' Contributions

This article is derived from the master's thesis of the first author, with the second author serving as the advisor, Khorram Abad Branch, Islamic Azad University. Both authors equally contributed to this article.

## References

- Abdelfattah, F., Al Mashaikhya, N. Y., Dahleez, K. A., & El Saleh, A. (2024). A systematic review of e-learning systems adoption before and during the COVID-19. *Global Knowledge, Memory and Communication*, 73(3), 292-311. <https://doi.org/10.1108/GKMC-02-2022-0033>
- Anthony, B., Kamaludin, A., Romli, A., Raffei, A. F. M., Nincarean A/L Eh Phon, D., Abdullah, A., Ming, G. L., Shukor, N. A., Nordin, M. S., & Baba, S. (2019). Exploring the role of blended learning for teaching and learning effectiveness in institutions of higher learning: An empirical investigation. *Education and Information Technologies*, 24(6), 3433-3466. <https://doi.org/10.1007/s10639-019-09941-z>
- Bhardwaj, P., Bhardwaj, N., Mahdi, F., Srivastava, J., & Gupta, U. (2015). Integrated teaching program using case-based learning. *International Journal of Applied and Basic Medical Research*, 5(Suppl 1), S24-S28. [https://journals.lww.com/ijab/fulltext/2015/05001/Integrated\\_teaching\\_program\\_using\\_case\\_based.8.aspx](https://journals.lww.com/ijab/fulltext/2015/05001/Integrated_teaching_program_using_case_based.8.aspx)
- Boelens, R., Voet, M., & De Wever, B. (2018). The design of blended learning in response to student diversity in higher education: Instructors' views and use of differentiated instruction in blended learning. *Computers & Education*, 120, 197-212. <https://doi.org/10.1016/j.compedu.2018.02.009>
- Elisabeth, C., Christine, W.-H., & Ewa, P. (2009). Teaching during clinical practice: Strategies and techniques used by preceptors in nursing education. *Nurse Education Today*, 29(5), 522-526. <https://doi.org/10.1016/j.nedt.2008.11.012>
- Gashi, A., Zhushi, G., & Krasniqi, B. (2024). Exploring determinants of student satisfaction with synchronous e-learning: evidence during COVID-19. *The International Journal of Information and Learning Technology*, 41(1), 1-20. <https://doi.org/10.1108/IJILT-05-2022-0118>
- Ghalavand, H. (2024). Iranian Medical Students' E-Learning Continuance Intention After End of COVID-19 Pandemic. *Journal of education and health promotion*, 13(1). [https://doi.org/10.4103/jehp.jehp\\_1698\\_22](https://doi.org/10.4103/jehp.jehp_1698_22)
- Hakimi, N., Hakimi, M., Hejran, M., Quraishi, T., Qasemi, P., Ahmadi, L., Daudzai, M., & Ulusi, H. (2024). Challenges and Opportunities of E-Learning for Women's Education in Developing Countries: Insights from Women Online University. *EDUTREND: Journal of Emerging Issues and Trends in Education*, 1(1), 57-69. <https://doi.org/10.59110/edutrend.310>
- Haseli Songhori, M., & Salamti, K. (2024). The Linkage Between University Students' Academic Engagement and Academic Support: The Mediating Role of Psychological Capital [Research Article]. *Iranian Journal of Educational Sociology*, 7(2), 72-84. <https://doi.org/10.61838/kman.ijes.7.2.10>
- Jowsey, T., Foster, G., Cooper-Ioelu, P., & Jacobs, S. (2020). Blended learning via distance in pre-registration nursing education: A scoping review. *Nurse Education in Practice*, 44, 102775. <https://doi.org/10.1016/j.nepr.2020.102775>
- Kabirian, M. (2024). The Process of Professional Ethics Development in Midwifery Students: A Grounded Theory Study. *Iranian Journal of Nursing and Midwifery Research*, 29(3), 302-308. [https://doi.org/10.4103/ijnmr.ijnmr\\_12\\_23](https://doi.org/10.4103/ijnmr.ijnmr_12_23)
- Karimi, H., Kalati, H., Amini, S., & Jamalzadeh, N. (2021). Applying Blended Education Methods in Nursing Process Learning: An educational evaluation study. *IJME*, 21(0), 533-536. <http://ijme.mui.ac.ir/article-1-5354-en.html>
- Karimi Moonaghi, H., & mohsenizadeh, s. m. (2019). Blended Learning and Its Effectiveness in Nursing Education: Review. *Educational Development of Judishapur*, 10(1), 29-40. <https://doi.org/10.22118/edc.2019.89145>
- Liu, B. (2024). Research on Personalized Teaching Strategies Based on Learner Profiles in a Blended Learning Environment. *International Journal of Information and Communication Technology Education*, 20(1), 1-25. <https://doi.org/10.4018/ijicte.346823>
- Liu, Y. (2024). The Impacts of Learning Motivation, Emotional Engagement and Psychological Capital on Academic Performance in a Blended Learning University Course. *Frontiers in psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1357936>
- Neu, T., Rode, J. L., & Hammer, S. E. (2024). An Examination of Social Support and Mental Health in Nursing Students During COVID-19. *Nursing Education Perspectives*, 45(2), 112-114. <https://doi.org/10.1097/01.nep.0000000000001148>
- Nowroozi, H. M., Mohsenizadeh, S. M., Jafari, S. H., & Ebrahimzadeh, S. (2011). The effect of teaching using a blend of collaborative and mastery of learning models, on learning of vital signs: An experiment on nursing and operation room students of Mashhad University of Medical Sciences. <https://www.sid.ir/paper/59397/en>
- Poon, W. C., Kunchambo, V., & Koay, K. Y. (2024). E-Learning Engagement and Effectiveness during the COVID-19



- Pandemic: The Interaction Model. *International Journal of Human-Computer Interaction*, 40(2), 393-408. <https://doi.org/10.1080/10447318.2022.2119659>
- Pourghane, P., Emany Sigaroudy, A. H., & Salary, A. (2018). Faculty Members' Experiences about Participating In Continuing Education Programs In 2016- 2017: a Qualitative Study. *gums-rme*, 10(1), 20-10. <https://doi.org/10.29252/rme.10.1.20>
- Rieger, U. M., Pierer, K., Farhadi, J., Lehmann, T., Röers, B., & Pierer, G. (2009). Effizienter Erwerb chirurgischer Basistechniken durch „blended learning“. *Der Chirurg*, 80(6), 537-543. <https://doi.org/10.1007/s00104-008-1641-4>
- Sharifi, M., Fathabadi, J., Shokri, O., & Pakdaman, S. (2019). The experience of e-learning in the educational system of Iran: Meta-analysis of the effectiveness of e-learning in comparison to face-to-face education. *Research in School and Virtual Learning*, 7(1), 9-24. <https://doi.org/10.30473/etl.2019.6051>
- Tong, Y., & Wei, X. (2020). Teaching design and practice of a project-based blended learning model. *International Journal of Mobile and Blended Learning (IJMBL)*, 12(1), 33-50. <https://www.igi-global.com/article/teaching-design-and-practice-of-a-project-based-blended-learning-model/239544>
- Wichadee, S. (2017). A Development of the Blended Learning Model Using Edmodo for Maximizing Students' Oral Proficiency and Motivation. *International Journal of Emerging Technologies in Learning (Ijet)*, 12(02), pp. 137-154. <https://doi.org/10.3991/ijet.v12i02.6324>